

**Amendments to the Claims:**

The following listing of claims will replace all prior versions of claim listings in this application.

1. (currently amended): A genetically modified plant or part thereof comprising daidzein and/or derivatives thereof, wherein said plant or part thereof does not naturally produce isoflavones and is active in both flavonol and anthocyanin biosynthesis and comprises:

(a) one or more a first nucleotide sequence sequences encoding a chalcone reductase comprising the an amino acid with at least 95% sequence identity to the amino acid sequence of SEQ ID NO: 2, or a fragment thereof with chalcone reductase activity and

(b) one or more a second nucleotide sequence sequences encoding an isoflavone synthase comprising the an amino acid sequence with at least 95% sequence identity to the amino acid sequence of SEQ ID NO: 4 or a fragment thereof with isoflavone synthase activity.

2. (currently amended): A genetically modified plant or part thereof according to claim 1, further comprising one or more a third nucleotide sequence sequences encoding a chalcone isomerase comprising the an amino acid sequence with at least 95% sequence identity to the amino acid sequence of SEQ ID NO: 6 or a fragment thereof capable of catalysing the conversion of 4,2'4' trihydroxchalcone to 7,4'-dihydroxyflavanone.

3-21. (cancelled)

22. (currently amended): A genetically modified plant or part thereof according to claim 1 wherein said one or more nucleotide sequences comprise (i) a the first nucleotide sequence comprises the nucleotide sequence of shown in SEQ ID NO: 1, or a nucleotide sequence which hybridizes thereto under conditions of 1x SSC, 0.1% SDS, 25°C for 20 minutes and encodes a chalcone reductase; and (ii) a the second nucleotide sequence comprises the nucleotide sequence of shown in SEQ ID NO: 3, or a nucleotide sequence which hybridizes thereto under conditions of 1x SSC, 0.1% SDS, 25°C for 20 minutes and encodes an isoflavone synthase.

23. (currently amended): A genetically modified plant or part thereof according to claim 2 wherein said one or more nucleotide sequences the third nucleotide comprises the nucleotide sequence of

comprises a nucleotide sequence shown in SEQ ID NO: 5, or a nucleotide sequence which hybridizes thereto under conditions of 1× SSC, 0.1% SDS, 25°C for 20 minutes and encodes a chalcone isomerase.

24. (currently amended): A genetically modified plant or part thereof according claim 22 23 wherein the third nucleotide sequence said one or more nucleotide sequences further comprises a consists of the nucleotide sequence as shown in SEQ ID NO: 5, or a sequence which hybridizes thereto under conditions of 1× SSC, 0.1% SDS, 25°C for 20 minutes.

25. (previously presented): A genetically modified plant or part thereof according to claim 1 wherein said plant or part thereof is selected from the group consisting of tobacco, *Lactuca sp.*, broccoli, asparagus, red cabbage, potato, spinach, rhubarb, red onion, shallot, aubergine, radish, Swiss chard, purple basil, watermelon and berries.

26-27. (cancelled)

28. (previously presented): A food product comprising a genetically modified plant or part thereof according to claim 1.

29. (previously presented): A food product according to claim 28 wherein said food product is selected from the group consisting of packaged mixed salad, soup, spread, sauce, fruit bar and ice cream.

30. (previously presented): A method for the production of a food product or nutritional supplement comprising culturing the genetically modified plant or part thereof according to claim 1 under conditions suitable for expression of a chalcone reductase or isoflavone synthase.

31. (previously presented): A method for the production of a food product or nutritional supplement comprising culturing the genetically modified plant or part thereof according to claim 26 under conditions suitable for expression of a chalcone reductase or isoflavone synthase.

32-33. (cancelled)

34. (currently amended): A process for increasing the content of daidzein and/or derivatives thereof in a plant or part thereof, wherein said process comprises the steps:

(i) selecting a non-isoflavone producing plant wherein said plant or part thereof is active in both anthocyanin and flavonol biosynthesis; and

(ii) genetically modifying said plant to incorporate one or more nucleotide sequences encoding a chalcone reductase comprising the an amino acid with at least 95% sequence identity to the amino acid sequence of SEQ ID NO: 2 or a fragment thereof with chalcone reductase activity and one or more nucleotide sequences encoding a isoflavone synthase comprising the an amino acid with at least 95% sequence identity to the amino acid sequence of SEQ ID NO: 4 or a fragment thereof with isoflavone synthase activity so as to increase the activity of chalcone reductase and isoflavone synthase in said plant or part thereof.

35. (currently amended): A process according to claim 34, wherein said process further comprises genetically modifying said plant or part thereof to incorporate one or more nucleotide sequences encoding a chalcone isomerase comprising the an amino acid with at least 95% sequence identity to the amino acid sequence of SEQ ID NO: 6 or a fragment thereof capable of catalyzing the conversion of 4,2',4'-trihydroxchalcone to 7,4'-dihydroxyflavanone so as to increase the activity of the chalcone isomerase.

36. (currently amended): A process according to claim 34, wherein said plant is genetically modified to incorporate into the genome of the plant (i) one or more nucleotide sequences encoding a chalcone reductase comprises a nucleotide sequence as shown in SEQ ID NO: 1, or a sequence which hybridizes thereto under conditions of 1x SSC, 0.1% SDS, 25°C for 20 minutes and encodes a chalcone reductase; and (ii) one or more nucleotide sequences encoding a isoflavone synthase comprises a nucleotide sequence as shown in SEQ ID NO: 3, or a sequence which hybridizes thereto under conditions of 1x SSC, 0.1% SDS, 25°C for 20 minutes and encodes an isoflavone synthase.

37. (currently amended): A process according to claim 35, wherein one or more nucleotide sequences encoding a chalcone isomerase plant is genetically modified to incorporate into the genome of the plant comprises a nucleotide sequence as shown in SEQ ID NO: 5, or a sequence which hybridizes thereto under conditions of 1x SSC, 0.1% SDS, 25°C for 20 minutes and encodes a chalcone isomerase

capable of catalyzing the conversion of 4,2',4' trihydroxchalcone to 7,4' dihydroxyflavanone.

38. (currently amended) A process according to claim 37 36, wherein said one or more nucleotide sequences encoding a chalcone isomerase plant is genetically modified to incorporate into the genome of the plant a consists of a nucleotide sequence as shown in SEQ ID NO: 5, or a sequence which hybridizes thereto under conditions of 1x SSC, 0.1% SDS, 25°C for 20 minutes and encodes a chalcone isomerase capable of catalyzing the conversion of 4,2',4' trihydroxchalcone to 7,4' dihydroxyflavanone.

39. (previously presented) A process according to claim 34 wherein said plant is selected from the group consisting of tobacco, *Lactuca sp.*, broccoli, asparagus, red cabbage, potato, spinach, rhubarb, red onion, shallot, aubergine, radish, Swiss chard, purple basil, watermelon and berries.

40-41 (cancelled)

42. (new): A genetically modified plant or part thereof according to claim 1, wherein the first nucleotide sequence encodes a chalcone reductase comprising the amino acid sequence of SEQ ID NO: 2.

43. (new): A genetically modified plant or part thereof according to claim 1, wherein the first nucleotide sequence encodes a chalcone reductase consisting of the amino acid sequence of SEQ ID NO: 2.

44. (new): A genetically modified plant or part thereof according to claim 1, wherein the second nucleotide sequence encodes a isoflavone synthase comprising the amino acid sequence of SEQ ID NO: 4.

45. (new): A genetically modified plant or part thereof according to claim 1, wherein the second nucleotide sequence encodes a isoflavone synthase consisting of the amino acid sequence of SEQ ID NO: 4.

46. (new): A genetically modified plant or part thereof according to claim 2, wherein the third nucleotide sequence encodes a chalcone isomerase comprising the amino acid sequence of SEQ ID NO: 6.

47. (new): A genetically modified plant or part thereof according to claim 22, wherein the first nucleotide sequence consists of the nucleotide sequence of SEQ ID NO: 1.

48. (new): A genetically modified plant or part thereof according to claim 22, wherein the second nucleotide sequence consists of the nucleotide sequence of SEQ ID NO: 3.

49. (new): The process of claim 34, wherein the chalcone reductase comprises the amino acid sequence of SEQ ID NO: 2.

50. (new): The process of claim 34, wherein the chalcone reductase consists of the amino acid sequence of SEQ ID NO: 2.

51. (new): The process of claim 34, wherein the isoflavone synthase comprises the amino acid sequence of SEQ ID NO: 4.

52. (new): The process of claim 34, wherein the isoflavone synthase consists of the amino acid sequence of SEQ ID NO: 4.

53. (new): The process of claim 35, wherein the chalcone isomerase comprises the amino acid sequence of SEQ ID NO: 6.

54. (new): The process of claim 35, wherein the nucleotide sequence encoding the chalcone isomerase consists of the amino acid sequence of SEQ ID NO: 6.

55. (new): The process of claim 36, wherein the nucleotide sequence encoding the chalcone reductase consists of the nucleotide sequence of SEQ ID NO: 1.

56. (new): The process of claim 36, wherein the nucleotide sequence encoding the isoflavone synthase consists of the nucleotide sequence of SEQ ID NO: 3.